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**TRANSMITTAL
FORM**

(to be used for all correspondence after initial filing)

TRANSMITTAL FORM (to be used for all correspondence after initial filing)	Application Number	10/582,310
	Filing Date	
	First Named Inventor	Detlef Schulz
	Art Unit	
	Examiner Name	
Total Number of Pages in This Submission	Attorney Docket Number	4965-000266/NP

ENCLOSURES (check all that apply)

<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment / Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/ Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance Communication to Technology Center (TC) <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): International Preliminary Report on Patentability; and postcard.
Remarks		The Commissioner is hereby authorized to charge any additional fees that may be required under 37 CFR 1.16 or 1.17 to Deposit Account No. 08-0750. A duplicate copy of this sheet is enclosed.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Harness, Dickey & Pierce, P.L.C.	Attorney Name Christopher M. Brock	Reg. No. 27313
Signature			
Date	November 6, 2006		

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.

Typed or printed name	Christopher M. Brock	Express Mail Label No.	EV 757 778 281 US (11/6/2006)
Signature		Date	November 6, 2006

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

EV 757 778 281 US

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 2225P113WO ML ha	FOR FURTHER ACTION		See item 4 below
International application No. PCT/EP2004/012047	International filing date (<i>day/month/year</i>) 26 October 2004 (26.10.2004)	Priority date (<i>day/month/year</i>) 11 December 2003 (11.12.2003)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant KURZ, Gerhard			

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).																								
2.	This REPORT consists of a total of 7 sheets, including this cover sheet. In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																								
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 30%;">Box No. I</td> <td style="width: 60%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																								

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Date of issuance of this report 29 August 2006 (29.08.2006)</td> </tr> <tr> <td style="padding: 2px;">Authorized officer Agnes Wittmann-Regis e-mail: pt06@wipo.int</td> </tr> </table>	Date of issuance of this report 29 August 2006 (29.08.2006)	Authorized officer Agnes Wittmann-Regis e-mail: pt06@wipo.int
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Authorized officer Agnes Wittmann-Regis e-mail: pt06@wipo.int			

PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing (day/month/year) **See form PCT/ISA/210**

Applicant's or agent's file reference
2225P113WO ML ha

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2004/012047

International filing date (day/month/year)
26.10.2004

Priority date (day/month/year)
11.12.2003

International Patent Classification (IPC) or both national classification and IPC
H02M5/257, H02M1/12, H02P7/295

Applicant
KURZ, Gerhard

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/EP

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2004/012047

Box No. 1

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2004/012047

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement											
<p>1. Statement:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 30%; vertical-align: top;">Novelty (N)</td> <td style="width: 40%;"> Claims 1-9 Claims _____ </td> <td style="width: 30%; vertical-align: top;">YES NO</td> </tr> <tr> <td style="vertical-align: top;">Inventive step (IS)</td> <td> Claims 1-9 Claims _____ </td> <td style="vertical-align: top;">YES NO</td> </tr> <tr> <td style="vertical-align: top;">Industrial applicability (IA)</td> <td> Claims 1-9 Claims _____ </td> <td style="vertical-align: top;">YES NO</td> </tr> </table>				Novelty (N)	Claims 1-9 Claims _____	YES NO	Inventive step (IS)	Claims 1-9 Claims _____	YES NO	Industrial applicability (IA)	Claims 1-9 Claims _____	YES NO
Novelty (N)	Claims 1-9 Claims _____	YES NO										
Inventive step (IS)	Claims 1-9 Claims _____	YES NO										
Industrial applicability (IA)	Claims 1-9 Claims _____	YES NO										
<p>2. Citations and explanations:</p> <p>1. Reference is made to the following documents:</p> <p style="margin-left: 40px;">D1: EP-A-0 859 452 (KURZ, GERHARD) 19 August 1998 (1998-08-19)</p> <p style="margin-left: 40px;">D2: EP-A-0 760 551 (MINOLTA CO., LTD) 5 March 1997 (1997-03-05)</p> <p style="margin-left: 40px;">D3: DE 21 31 750 A1 (ALTENBURGER KG) 28 December 1972 (1972-12-28)</p> <p style="margin-left: 40px;">D4: DE 100 52 910 A1 (LOHER AG) 25 July 2002 (2002-07-25)</p> <p>2. Independent claim 1</p> <p>2.1. Document D1 is regarded as the closest prior art over the subject matter of claim 1. It discloses, in figure 3 (the references between parentheses relate to said document), an apparatus for power control by phase gating of an AC voltage, which supplies an electrical load, and for reduction of harmonics which are created by the phase gating, in particular up to a region of 4 kHz, preferably in the region of the third harmonic (see column 4, lines 43-49):</p> <ul style="list-style-type: none"> - having an electric motor (M) as the load, - having a first circuit element (T) which is 												

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INTERNATIONAL SEARCHING AUTHORITY

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Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

- connected in series with the load and is driven by a control device in order to carry out phase gating,
- and having a resistance element (R).

2.2. The subject matter of claim 1 therefore differs from the known apparatus by the fact

- that a second circuit element is provided in series with the resistance element,
- with the series circuit being arranged in parallel with the first circuit element,
- and with the control device being designed such that it drives the second circuit element shortly before the first circuit element and switches it to the on state for a short period of time,
- and that the resistance element is arranged in an airflow which is produced by the electric motor in order to cool it.

The subject matter of claim 1 is therefore novel (PCT Article 33(2)).

2.3. The problem addressed by the present invention can therefore be considered that of providing an apparatus for power control by phase gating which can be produced in a cost-effective manner and, furthermore, has improved humming properties.

2.4. The solution to this problem proposed in claim 1 of the present application involves an inventive step (PCT Article 33(3)) for the following reasons:

- a) Documents D2 and D3 describe the same principle of including a series circuit comprising a second

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INTERNATIONAL SEARCHING AUTHORITY

International application No.

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Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

circuit element and a resistance element in parallel with the first circuit element in order to reduce the harmonic (see, in D2, figure 2 and column 6, lines 31-33). Nevertheless, the apparatus from documents D2 and D3 is only provided for a lamp having dimmers or heating elements (see, in D2, element 52, "heater", in D3, incandescent lamp as a load V). A person skilled in the art is not given any indication in D2 and D3 for cooling the resistance. The abovementioned problem of cost-effective cooling is mentioned neither in D2 nor in D3.

b) D4 discloses, in figure 1, an electrical machine having a resistance arranged in the airflow of the machine fan (see section 7). However, this is not the comparable resistance for reducing harmonics, as in D2, D3 or in the subject matter of the application, but is a braking resistance.

c) Such a combination of features, a parallel series circuit and a resistance arranged in an airflow produced by the electric motor, was not suggested to a person skilled in the art by D2-D4 at the time of the invention.

The subject matter of claim 1 can therefore be considered inventive (PCT Article 33(3)).

3. Independent method claim 9

The same considerations as for apparatus claim 1 also apply to method claim 9. The subject matter of

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

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Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

claim 9 can therefore be considered novel and
inventive (PCT Article 33(2)&(3)).

4. Dependent claims

Claims 2-8 are dependent on claim 1 and therefore
likewise meet the PCT requirements for novelty and
inventive step.